

24.6300

40094

S/048/62/026/008/005/028
B163/B104

AUTHORS: Vasil'yev, V. D., Gangrskiy, Yu. P., Yerokhina, K. I., and
Lemberg, I. Kh.

TITLE: Investigation of the Coulomb excitation of the second level
 2^{+} of Pd^{104}

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,
no. 8, 1962, 997 - 999

TEXT: Experimental investigation of the second level 2^{+} of the Pd^{104}
nucleus at 1.34 Mev by bombardment with $\text{N}^{14;4+}$ ions with an energy of 42 Mev.
The γ -background is so low, and the first-state energy 0.56 Mev so much
different from that of the cascade quanta (0.78 Mev), that a direct measure-
ment of the γ -spectra can be evaluated. The reduced transition probability
 $B(E2)_{0 \rightarrow 2}$, was calculated from the theoretical expression by Alder et al.
(Rev. Mod. Phys., 28, 432, (1956)) for the cascade excitation cross sec-
tion to be $0.015 \cdot 10^{-48} \text{ e}^2 \text{ cm}^4$. This value coincides with the theoretical
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Investigation of the Coulomb ...

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estimation according to Weisskopf (one-particle model). The lifetime calculated from $B(E2)_{0 \rightarrow 2}$, is $5.8 \cdot 10^{-12}$ sec. The error is about 35%. There is 1 figure. .

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40095

S/048/62/026/008/006/028
B163/B104

24.6300

AUTHORS: Vasil'yev, V. D., Yerokhina, K. I., and Lemberg, I. Kh.

TITLE: Lifetime of the first level of Ti^{50}

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 999 - 1001

TEXT: An isotopically enriched target with 58% Ti^{50} was Coulomb-excited with 30 Mev $N^{14;3+}$ ions. For the level at 1.58 Mev the reduced upward transition probability $B(E2)\uparrow$ was determined as $0.040 e^2 \cdot 10^{-48} cm^4$ and the lifetime of this state as $1.03 \cdot 10^{-12}$ sec. For a correct evaluation of the area below the 1.58 Mev peak, it was compared with the areas of the 1.19 Mev peak of Ni^{62} and of the 0.615 Mev peak of Se^{78} . The results are compared with those for Ti^{46} and Ti^{48} (Andreyev et al., Nucl. Phys., 19, 400 (1960)). With increasing number of neutrons the excitation energy increases from 0.89 to 1.50, and $B(E2)$ decreases from 0.083 to 0.040. There are 2 figures and 1 table.

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40096

S/O48/62/026/008/007/028
B163/B104

24,6300

AUTHORS: Gangrskiy, Yu. P., and Lemberg, I. Kh.

TITLE: Coulomb excitation of spherical even-even nuclei of the second levels

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962; 1001 - 1014

TEXT: Experimental investigation of the two lowest levels of Ge^{70} , Ge^{72} , Ge^{74} , Se^{74} , Se^{76} , Se^{78} , Se^{80} , Se^{82} , Mo^{94} , Mo^{96} , Mo^{98} , Mo^{100} , Pd^{106} , Pd^{108} , Pd^{110} , Te^{124} , Te^{126} , Te^{128} , Te^{130} . The investigation of the second 2^+ level of a spherical even-even nucleus by Coulomb excitation is more difficult than that of the lower first 2^+ level because the excitation cross section is much smaller, the γ line corresponding to the direct transition to the ground state is very weak compared with the background, and the γ line corresponding to the upper cascade transition is near to the energy of the first level. For this reason, coincidence measurements of the cascade γ quanta are made. The α particles or N^{14} ions are accelerated.

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Coulomb excitation of ...

ed in a cyclotron. The γ rays are recorded by two scintillation counters with NaJ(Tl) crystals and photomultipliers in coincidence. The crystal recording the upper cascade quantum was arranged at a distance of 15 mm from the target and at an angle of 90° to the ion beam, the other crystal at 5 mm distance and at an angle of 135° . When γ transitions with an energy below 600 kv were to be observed, the second crystal was disposed along the direction of the ion beam and far enough removed to prevent the 511 kev quanta from positron annihilation being recorded in both crystals at the same time. The pulses coming from one of the photomultipliers were discriminated in a 128-channel amplitude analyzer open only when the other multiplier simultaneously gave a pulse corresponding to the transition from the first 2^+ level to the ground state. In order to correct for accidental coincidences of the relatively frequent transition from the first level, these were measured separately. Thus the multichannel analyzer recorded two spectra at the same time, one containing only the accidental coincidences, the other both accidental and real coincidences. N^{14} ion with energies near to the Coulomb barrier of the target nuclei were used. In this case the ratio of second level to first level excitation is higher than in the case of excitation with α particles. The results, Card 2/6

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Coulomb excitation of ...

i. e. the energies of the two lowest 2^+ levels, the corresponding reduced transition probabilities, the yield ratios from thick targets, life times etc. are listed in tables. Corrections were made for the contribution of double Coulomb excitation. For the second levels of Mo^{96} , Mo^{98} , Te^{126} , Te^{128} , and Te^{130} it was not possible to determine the quantum characteristics unambiguously. For these nuclei, the reduced transition probabilities $B(E2; 4 \rightarrow 2)$ and $B(E2; 0' \rightarrow 2)$ were also calculated on the assumption that the levels have spins 4 and $0'$ respectively. The experimental transition probabilities are compared with theoretical values. $B(E2; 2' \rightarrow 0)$ is of the same order; $B(E2; 2' \rightarrow 2)$ much greater and $B(M1; 2' \rightarrow 2)$ much smaller than the theoretical one-particle values. The experimental ratios $B(E2; 2' \rightarrow 2) / B(E2; 2 \rightarrow 0)$ and $B(E2; 2' \rightarrow 0) / B(E2; 2 \rightarrow 0)$ agree better with the axially-asymmetric rotator theory by Davydov and Filippov (Zh. eksperim. i teor. fiz., 35, 440 (1958)) than with the theory of quadrupole oscillations. There are 7 figures and 5 tables.

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24.6300

40097

S/048/62/026/008/008/028
B163/B104

AUTHORS: Gusinskiy, G. M., Lemberg, I. Kh., and Treybal, Z.

TITLE: Angular distribution of the γ radiation emitted with the discharge of the first excited levels of the nuclei Ti^{47} and V^{51} and the level 246 kev of Se^{77} .

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 1014 - 1018

TEXT: The angular distributions of the γ quanta emitted with the transition from the 160 kev Ti^{47} , 323 kev V^{51} , and 246 kev Se^{77} levels to the ground state were measured in order to determine the spin values of the levels and the relative intensity of E2- and M1-radiation. The levels were excited by bombardment with triply charged 16.5 (for V^{51} and Se^{77}) and 18.3 (for Ti^{47}) Mev N^{14} ions from the cyclotron of the FTI. The angular distribution was measured simultaneously by 4 scintillation detectors arranged at angles of 0° , 30° , 60° , and 90° to the ion beam. The pulses

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Angular distribution of the ...

from each of the 4 detectors were recorded in four groups of a 128-channel amplitude analyzer. The surface of the isotopically enriched targets, titanium oxide, metallic vanadium and selenium, measured $6 \times 6 \text{ cm}^2$. From the results it is concluded that spin and parity of the first level of Ti^{47} at 160 keV are most probably $\frac{5}{2}$, but $\frac{7}{2}$ cannot be completely excluded. Spin and parity of the first level of V^{51} at 323 keV are $\frac{5}{2}$. The ratio of the amplitudes of the E2 - and M1 - transitions is $\delta = 0.51^{+0.15}_{-0.10}$ and the life time of the 323 keV level $(2.75^{+0.85}_{-0.63}) \cdot 10^{-10}$ sec. Spin and parity of the 246 keV level of Se^{77} is $\frac{3}{2}$, the E2 - M1 - amplitude ratio $\delta = +0.19^{+0.02}_{-0.03}$ and the life time of the 246 keV level $\tau = (0.50^{+0.26}) \cdot 10^{-10}$ sec. There are 4 figures.

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Card 2/2

24.6600

37105

S/056/62/042/004/017/037
B164/B102

AUTHORS: Gangrskiy, Yu. P., Lemberg, I. Kh.
TITLE: Coulomb excitation of second 2^+ levels of even-even nuclei of intermediate atomic weights
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 4, 1962, 1027-1028

TEXT: The authors study the Coulomb excitation of even-even nuclei of Ge, Se, Mo, Pd and Te isotopes by measuring the coincidences of cascade γ -quanta. Targets of these elements (in some cases enriched) were irradiated in the FTI AN SSSR im. A. F. Ioffe (FTI AS USSR imeni A. F. Ioffe) cyclotron with 8.5 Mev α -beams and 36.41 and 53 Mev nitrogen ions. The γ -quanta were measured with two NaI(Tl) scintillation counters in a fast-slow coincidence circuit. A 128-channel pulse height analyzer was used to study the coincidence γ -spectrum. To determine the effect of random coincidences, the spectrum of true plus random coincidences and the spectrum of random coincidences were measured simultaneously in two registers of the pulse height analyzer. From the coincidence

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S/056/62/042/004/017/037
B164/B192

Coulomb excitation of second ...

spectra obtained it was possible to determine the energies ΔE of the second 2^+ levels and the reduced probabilities of transitions to these levels. Since the arrangement was designed to measure γ -quanta only, only the value $\epsilon(E2)$ could be determined, where ϵ is the contribution of cascade transitions during deexcitation of the second level. To determine the reduced transition probability $B(E2)$, it is necessary to know the ratio of direct and cascade transitions of the second level. For a number of nuclei this ratio is known from data on beta decay. Corrections for double Coulomb excitation are necessary for calculating $B(E2)$. For the bulk of nuclei this correction does not exceed 30%.

It is more than 50% only for Ge^{72} and Te^{126} . Interference effects were neglected since phase differences are unknown. Owing to geometry, the correction for the angular correlation of cascade γ -quanta was less than 5%. The results are collected in the table. The values $\epsilon B(E2)^x$ obtained by Stelson and McGowan (Phys. Rev. 121, 209, 1961) in the case of Coulomb excitation with α -particles are given for comparison. Results are in agreement within the limits of error. For Se^{74} , Se^{82} , Mo^{96} , Mo^{98} ,

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Coulomb excitation of second ...

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Te^{128} , Te^{130} , the energies of the second 2^+ levels have hitherto been unknown.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskii institut Akademii nauk
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of Sciences USSR)

SUBMITTED: December 2, 1961

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Coulomb excitation of second ...

S/056/62/042/004/017/037
B164/B102

Ядро	ΔE , keV	$\kappa B(E2)$, $e^2 \cdot 10^{24}$	$B(E2)$, $e^2 \cdot 10^{24}$	$\kappa B(E2)^*$, $e^2 \cdot 10^{24}$
Ge ⁷⁰	1709±19	0,25±0,08	0,675	
Ge ⁷²	1466±16	0,15±0,04	0,175	
Ge ⁷⁴	1200±16	0,55±0,10	2,20	0,44±0,09
Se ⁷⁴	1373±20	0,50±0,20		
Se ⁷⁶	1230±15	0,65±0,18	1,17	0,76±0,15
Se ⁷⁸	1306±15	0,78±0,15	1,40	0,55±0,11
Se ⁸⁰	1441±17	0,94±0,26	1,94	0,97±0,20
Se ⁸²	1486±20	0,78±0,18		
Mo ⁹⁴	1577±20	0,50±0,15	0,545	
Mo ⁹⁶	1524±19	1,09±0,30		
Mo ⁹⁸	1491±20	1,38±0,35		
Mo ¹⁰⁰	1047±14	1,35±0,35		
Pd ¹⁰⁶	1112±12	1,09±0,22	1,60	1,75±0,26
Pd ¹⁰⁸	940±11	0,87±0,20		1,08±0,23
Pd ¹¹⁰	813±11	1,37±0,20		0,74±0,11
Te ¹²⁴	1323±10	1,40±0,40	1,64	0,94±0,08
Te ¹²⁶	1457±17	0,47±0,15	0,50	
Te ¹²⁸	1601±20	1,20±0,28		
Te ¹³⁰	1765±20	1,12±0,23		

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S/056/62/043/005/007/058
B163/B186

AUTHORS: Afonin, O. F., Gangrskiy, Yu. P., Lemberg, I. Kh.,
Nabichvrishvili, V. A.

TITLE: Cascade Coulomb excitation of rotational levels with
4⁺ and 6⁺ spins

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 5(11), 1962, 1604-1610

TEXT: Cascade Coulomb excitation of some of the levels of the basic rotational band is possible in a deformed nucleus if the energy of the primary particles is sufficient. The measurement of the excitation cross sections makes it possible to check the theory of cascade Coulomb excitation and to gain information on the induced transition probabilities for the excited states. Targets enriched with Sm, Gd, Er, and W isotopes (Sm, Gd, and Er as oxides, W metallic) were bombarded with

50 Mev N¹⁴⁺ ions from a cyclotron. The γ spectra and coincidences of γ quanta emitted in consequence of Coulomb excitation and inelastically scattered ions were measured. The quanta were recorded by means of a Card 1/3

Cascade Coulomb excitation of ...

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scintillation spectrometer with a NaI (Tl) crystal. The scattered N^{14} ions were recorded by silicon p-n-detectors arranged at an angle corresponding to 135° scattering. Their voltage was so chosen that α particles and protons could easily be separated from the N^{14} ions. Table 1 gives the energy differences for the observed $0 \rightarrow 2$, $0 \rightarrow 4$, and $0 \rightarrow 6$ transitions of a number of even-even-nuclei. Most of them were already known, but the second and third level of Sm^{154} , the second level of Er^{170} and the third level of Gd^{160} were not yet known. In Table 2 the yield ratios of the $0 \rightarrow 2$, $0 \rightarrow 4$, and $0 \rightarrow 6$ transitions are listed and compared with the theory of Alder and Winter (Mat. Fys. Medd. Dan. Vid. Selsk. 32, 8, 1960). The agreement is good except for the cases of the W isotopes and Gd^{154} for which the observed yields are lower. There are 6 figures and 2 tables.

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Cascade Coulomb excitation of ...

S/056/62/043/005/007/058
B163/B186

SUBMITTED: June 5, 1962

Legend of Table 1: First column: Isotope.

Legend of Table 2: First column: Isotope, 3rd and 5th column: experiment, 4th and 6th column: theory

Изотоп	$\Delta E (0 \rightarrow 2),$ keV	$\Delta E (0 \rightarrow 4),$ keV	$\Delta E (0 \rightarrow 6),$ keV
Sm ¹⁵⁴	82	270	534
Gd ¹⁵⁴	123	370	
Gd ¹⁵⁶	89	285	
Gd ¹⁵⁸	79	260	
Gd ¹⁶⁰	75	246	503
Er ¹⁶⁴	90	290	
Er ¹⁶⁶	81	266	
Er ¹⁶⁸	80	263	
Er ¹⁷⁰	79	261	
W ¹⁸²	100	326	
W ¹⁸⁴	111	357	
W ¹⁸⁶	123	393	

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Table
1

Изотоп	q	$Y (0 \rightarrow 2)/Y (0 \rightarrow 4)$		$Y (0 \rightarrow 4)/Y (0 \rightarrow 6)$	
		опыт	теория	опыт	теория
Sm ¹⁵⁴	2,13	5,85	5,02	16,2	14,0
Gd ¹⁵⁴	1,72	12,60	8,25		
Gd ¹⁵⁶	1,99	5,12	6,17		
Gd ¹⁵⁸	2,18	6,40	4,92		
Gd ¹⁶⁰	2,25	4,25	4,61	11,4	13,9
Er ¹⁶⁴	1,87	7,00	6,86		
Er ¹⁶⁶	1,99	8,10	6,17		
Er ¹⁶⁸	2,00	6,67	6,11		
Er ¹⁷⁰	1,96	7,40	6,39		
W ¹⁸²	1,52	16,67	11,35		
W ¹⁸⁴	1,49	20,7	11,70		
W ¹⁸⁶	1,35	28,9	14,65		

Table 2

S/056/62/043/006/003/067
B163/B186

AUTHORS: Afonin, O. F., Gangrskiy, Yu. P., Lemberg, I. Kh.,
Nabichvrishvili, V. A., Udralov, Yu. I.

TITLE: Investigation of Coulomb excitation of the first Mo⁹² level

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 6(12), 1962, 1995 - 1997

TEXT: The Coulomb excitation cross section of Mo⁹², which is an even-even nucleus with a closed neutron shell ($N = 50$), is so small that direct observation of the Coulomb excitation by recording the γ -spectrum is impeded by the background γ -radiation from nuclear reactions with light impurity atoms such as C and O. To reduce this background, coincidences were counted of inelastically scattered bombarding particles and γ -quanta emitted in the decay of the first excited state. A metallic target enriched with the Mo⁹² isotope to more than 5 times its natural content was bombarded with N¹⁴ ions accelerated to 40 Mev in the FTI AN SSSR cyclotron. The scattered ions were recorded by means of 4 silicon pn-detectors with Card 1/2

S/048/63/027/002/001/023
B104/B180

AUTHORS: Birbrair, B. L., Yerokhina, K. I., and Lemberg, I. Kh.

TITLE: The energies of the first 2^+ levels and the reduced probabilities of E2-transitions to these levels in spherical nuclei

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 27, no. 2, 1963, 150-171

TEXT: The aim is to calculate ω_{2^+} energies of the first excited levels and the $B(E2)_{0 \rightarrow 2^+}$ reduced probability for spherical nuclei in a wide range of atomic numbers and to compare the results with experimental data. The calculation is carried out on the basis of a simple qualitative model taking account of pairing and quadrupole-quadrupole interaction between the outer nucleons. On the basis of results and symbols defined in previous papers the selection of $\epsilon_{\tau j}$, the calculation of Δ_{τ} and λ_{τ} , the mass difference between odd and neighbored even-even nuclei, and the selection of G_{τ}^{opt} , are studied in detail. By means of the formulas
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The energies of the first ...

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$$\frac{\chi}{10\pi} \sum_{\substack{jj' \\ j > j'}} \frac{(E_{\tau j} + E_{\tau j'}) L^2(\tau jj')}{(E_{\tau j} + E_{\tau j'})^2 - \omega^2} = 1 \quad (6) \text{ and}$$

$$B(E2)_{0 \rightarrow 2^+} = \frac{1}{4\pi\omega} \left\{ \sum_{\substack{jj' \\ j > j'}} \frac{(E_{\tau j} + E_{\tau j'}) L^2(\tau jj')}{[(E_{\tau j} + E_{\tau j'})^2 - \omega^2]^2} \right\}^{-1} \left\{ e_p \sum_{\substack{jj' \\ j > j'}} \frac{(E_{pj} + E_{pj'}) L^2(pjj')}{(E_{pj} + E_{pj'})^2 - \omega^2} + \right. \\ \left. + e_n \sum_{\substack{jj' \\ j > j'}} \frac{(E_{nj} + E_{nj'}) L^2(njj')}{(E_{nj} + E_{nj'})^2 - \omega^2} \right\}^2 \quad (7)$$

$$L^2(\tau jj') = \mathcal{L}^2(\tau jj') \frac{E_{\tau j} E_{\tau j'} - (e_{\tau j} - \lambda_{\tau})(e_{\tau j'} - \lambda_{\tau}) + \Delta_{\tau}^2}{2E_{\tau j} E_{\tau j'} (1 + \delta_{jj'})}$$

the reduced probability of E2-transitions from the ground state to the first 2^+ levels are calculated and the energy of the first excited levels of spherical nuclei. The reduce probabilities are in good agreement with experimental data in many diagrams. The energies agree well with experimental data in the case of Ni, Kr, Sr, Sn, Te, Ba, Ce, and Pb;

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The energies of the first ...

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agreement is worse in the case of Zn, Zr, Mo and Pt. The theoretical results reflect general tendencies observed experimentally, particularly the increasing ω_{2+} on approaching the outside of the shell with the maximum for neutron-filled shells. There are 12 figures and 2 tables. ,

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ALKHAZOV, D.G.; YEROKHINA, K.I.; LEMBERG, I.Kh.

Rotational nature of the 2.2 Mev. level in Al^{27} . Izv. AN SSSR.
Ser.fiz. 27 no.2:211-215 F '63. (MIRA 16:2)
(Quantum theory) (Aluminum)

ALKHAZOV, D.G.; ANDREYEV, D.S.; VASIL'YEV, V.D.; GANGRSKIY, Yu.P.;
LEMBERG. I.Kh.; VDRALOV, Yu.I.

Studying the Coulomb excitation of the first levels of even-even nuclei by measuring coincidences of gamma quanta and inelastically scattered ions. Izv. AN SSSR. Ser. fiz. 27
no.10:1285-1296 0 '63. (MIRA 16:10)

ALKHAZOV, D.G.; YEROKHINA, K.I.; LEMBERG, I.Kh.

Coulomb excitation of levels in odd nuclei C 135 <A<173.
Izv. AN SSSR. Ser. fiz. 27 no.11:1363-1376 N '63.
(MIRA 16:11)

LEMBERG, I. Kh.

"Coulomb-excitation of Nuclear Levels. (Survey Paper)."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

FTI (Physico Technical Inst)

ABRASHVILI, D. G.; VASIL'YEV, V. D.; GUSINSKIY, G. M.; LEMBERG, I. Kh.; NABICHVISHVILI, V. A.

"Angular Distributions of Gamma-rays Emitted in the Case of Coulomb-Excitation of Nuclei with Odd-A."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

FTI (Physico Technical Inst)

LEBERG, I. Kh.; VASIL'YEV, V. D.; GANGRSKIY, Yu. P.; LEMBERG, I. Kh.; UDRALOV, Yu. ...

"Double Coulomb-Excitation of 4 Levels in the Isotopes Ge, Se and Cd."

Report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

FTI (Physico Technical Inst)

G.; YEROKHINA, K. I.; LEMBE I. Kh.; UDRALOV, Yu. I.

Investigations of Coulomb-Excitations of Nuclei of Odd-A with the Help of
Ions of Nitrogen with Energies from 35 to 52 MeV."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

FTI (Physico Technical Inst)

, D. G.; GAL'PERIN, L. N.; GUSINSKIY, G. M.; LEMBERG, I. Kh.; NABICHVRISHVILI,

"Investigations of the Polarization of Gamma Radiation Emitted in the Case
of Coulomb-Excitation of Some Nuclei with Odd-A."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

FTI (Physico Technical Inst)

ALIMOV, D. G.; GAIKORSKIY, Yu. P.; LEMBERG, I. Kh.

"Investigations of Coulomb-Excitation of Second Excited Levels of Sm^{150} ,
 Sm^{152} and Sm^{154} ."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

FTI (Physico Technical Inst)

ACCESSION NR: AP4024042

S/0048/64/023/002/0232/0236

AUTHOR: Alkhazov, D.G.; Gangrskiy, Yu.P.; Leberg, I.Kh.; Udrarov, Yu.I.

TITLE: Coulomb excitation of electric octupole transitions in even-even tin isotopes [Report, Fourteenth Annual Conference on Nuclear Spectroscopy held in Tbilisi 14 to 22 Feb 1964]

SOURCE: AN SSSR. Izvestiya. Seriy fizicheskaya, v.28, no.2, 1964, 232-236

TOPIC TAGS: Coulomb excitation, electric octupole transition, collective level, reduced transition probability, even-even tin isotope

ABSTRACT: It is known from experiments on inelastic scattering of protons, deuterons and α -particles that in the case of medium atomic weight isotopes there are observed collective excited states with energies in the range from 2.5 to 4.0 MeV. The collective nature of these levels is evinced by the large value of the excitation cross section (comparable with the excitation cross section for the first levels). On the basis of the inelastic scattering data these levels have been assigned spin and parity 3^- and in view of their nature are associated with octupole vibrations. Investigation of Coulomb excitation of the 3^- levels is of considerable in-

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ACCESSION NR: AP4024042

terest inasmuch as it allows of determining not only the level energy but also the reduced transition probability $B(E3, 0 \rightarrow 3)$. In the present work there was investigated Coulomb octupole excitation in even-even tin isotopes. In such experiments, for reduction of the background radiation one must record either γ - γ coincidences or coincidences between the γ -rays and the inelastically scattered bombarding ions; both methods were employed in the present study. To increase the yield of γ -rays associated with excitation of the 3^- levels there were employed cyclotron accelerated N^{14} ions with energies close to the Coulomb barrier of the target nucleus; for the most part, N^{14} ions with energies of 44.5, 48.5, and 52.5 MeV. The targets were enriched in the even isotopes Sn^{114} , Sn^{116} , Sn^{118} , Sn^{120} , Sn^{122} and Sn^{124} . A number of the coincidence spectra are presented in figures and the values of $B(E3)$ deduced from the measurements are tabulated and compared with the results of O.Hansen and O.Nathan (Nucl.Phys.42,197,1963). The mean value of $B(E3)$ is close to $0.20 \times 10^{-72} \text{ cm}^6$, which is substantially lower than the values obtained by Hansen and Nathan (the higher values reported by these investigators are attributed to the influence of nuclear interaction processes). The values of $B(E3)$ deduced from the results of γ - N^{14} coincidence measurements decrease with decrease in ion energy. In general the results of the present investigation of octupole Coulomb excitation show that collective 3^- states are systematically excited in even-even tin isotopes; this is in

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ACCESSION NR: AP4024042

striking contrast with the behavior of the first 2^+ levels, the energy of which decreases with increase of A. The values of the ratio of the experimental value of $B(E3)$ to the single particle value of $B(E3)$ vary in the range from 20 to 40, i.e., are considerably greater than the corresponding ratios for the first 2^+ levels in the even-even tin isotopes. Orig.art.has: 2 formulas, 7 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 28Sep63

DATE ACQ: 08Apr64

ENCL: 00

SUB CODE: PH

NR REF SOV: 003

OTHER: 010

Card 3/3

L 14503-65 EWT(m) DIAAP/BSO/SSD/ASD(a)-5/AFWL/AS(mp)-2/ASD(p)-3/ESD(gs)/ESD(t)
 ACCESSION NR: AP4048638 S/0048/64/028/010/1667/1682

AUTHOR: Alkhazov, D.G.; Yerokhina, K.I.; Lemberg, I.Kh.

TITLE: Coulomb excitation of ^{59}Co , ^{61}Ni , ^{67}Zn , ^{95}Mo , ^{97}Mo , ^{103}Rh , ^{105}Pd , ^{111}Cd , ^{115}In , ^{133}Cs and ^{163}Dy /Report, Fourteenth Annual Conference on Nuclear Spectroscopy held in Tbilisi 14-22 Feb 1964/

SOURCE: AN SSSR: Izv.Seriya fizicheskaya, v.28, no.10, 1964, 1667-1682

TOPIC TAGS: nuclear physics, odd even nucleus, excited state, coulomb field, ion bombardment, gamma emission, nuclear model

ABSTRACT: This paper reports a continuation of the systematic investigation of the excited states of odd-A nuclei previously undertaken by the authors (Izv.AN SSSR, Ser.fiz.27,1363,1963). The eleven odd nuclei mentioned in the title were excited by bombardment with quadruply or pentuply charged nitrogen ions at energies from 35 to 52 MeV, and the excited states were observed by counting coincidences of γ -rays with the scattered ions. The experimental technique is described in more detail in the reference cited above and elsewhere by D.G.Akhazov et al (Izv.AN SSSR,Ser.fiz.27,1285,1963). The observed coincidence spectrum of each of the nuclei is discussed.

1/3

L 14503-65

ACCESSION NR: AP4048638

in detail with numerous references to the literature. Reduced E2 excitation probabilities and partial life-times for E2 transition to the ground state were obtained for 33 levels of the 11 nuclei. These quantities have not previously been reported for 25 of the levels, and 7 of the levels had not previously been observed. A number of spin and parity assignments were made (some tentative), and information concerning the relative intensities of some γ -transitions was obtained. With the aid of data of E.C.Booth and K.A.Wright (Bull.Amer.Phys.Soc.8,85,1963) it was determined that the intensity ratio of the E2 to M1 γ -transitions from the 1.19 MeV Co^{59} level is approximately 4%. Some of the results are compared with predictions of the excited core model of R.D.Lawson and J.L.Uretzky (Phys.Rev.108,1300,1957) and A. de Shalit (Phys.Rev.122,1530,1961). The nuclei with spin 1/2 showed the expected doublets with approximately equal B(E2) values; but the centers of gravity of the doublets were approximately 0.15 MeV below the corresponding 2^+ level of the core nucleus. The center of gravity law was better satisfied by Co^{59} and In^{115} multiplets, but the B(E2) values varied considerably. Orig.art.has: 13 figures and 2 tables.

L 14503-65

ACCESSION NR: AP4042638

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NR REF SOV: 009

OTHER: 034

3/3

L 14486-65 EWT(m) DIAAP/ASD(a)-5/SSD/BSL/AFWL/AS(mp)-2/ASD(p)-3/FSD(ff)/FSD(f)
 ACCESSION NR: AP4048639 8/0048/64/028/010/1683/1694

AUTHOR: Alkhazov, D.G.; Vasil'yev, V.D.; Gusinskiy, G.M.; Lemberg, I.Kh.; Nabichvrishvili, V.A. B

TITLE: Angular distribution of gamma-radiation emitted in Coulomb excitation of odd-A nuclei ¹⁹
Report, Fourteenth Annual Conference on Nuclear Spectroscopy held in Tbilisi 14-22 Feb 1964

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v.28, no.10, 1964, 1683-1694

TOPIC TAGS: nuclear physics, odd even nucleus, excited state, coulomb field, ion bombardment, gamma emission, nuclear spectroscopy

ABSTRACT: The angular distribution of the γ -rays resulting from Coulomb excitation of the following odd nuclei was investigated: Ne^{21} , Sc^{45} , Ti^{47} , Fe^{57} , Zn^{67} , Ga^{69} , Se^{77} , Rb^{85} , Rb^{87} , Pd^{105} , Sb^{123} , Te^{123} , I^{127} , Cs^{133} and Sm^{147} . All the nuclei except Ne^{21} were excited by bombardment with 16.1 MeV nitrogen ions. The Ne^{21} γ -rays were obtained by bombarding an aluminum target with 24 MeV Ne^{21} ions. The γ -radiation was recorded at 0, 30, 60 and 90° with four NaI scintillators, the relative efficiencies of which were determined by counting the γ -rays from standard radioactive

1/2

L 14486-65

ACCESSION NR: AP4048639

sources located at the target position. The coefficients of second and fourth degree Legendre polynomials in the expansion of the angular dependence of the intensity were obtained by the method of least squares, but the coefficients of the fourth degree polynomials were so small that they are disregarded in subsequent analyses. The portion of the anisotropy due to the Coulomb excitation process was calculated by a standard method, and the remaining anisotropy, after correction for instrumental effects, is ascribed to γ - γ correlations in cascade processes. From this the residual anisotropy, the spin and parity of the residual state and the E2 and M1 transition branching ratio were determined (in some cases tentatively), and the results are tabulated. Reduced M1 transition probabilities were obtained for 11 of the nuclei, and these and the corresponding theoretical single-particle values are tabulated. The data concerning each of the nuclei are discussed in detail with numerous references to the literature. Orig.art.has: 5 formulas, 2 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NR REF SOV: 011

OTHER: 026

2/2

ACCESSION NR: AP4012981

S/0020/64/154/004/0974/0977

AUTHORS: Sapozhnikov, D.I.; Alkhazov, D.G.; Eydel'man, Z.M.;
Bazhanova, N.V.; Lemberg, I. Kh.; Maslova, T.G.; Girshin,
A.B.; Popova, I.A.; Saakov, V.S.; Popova, O.F.;

TITLE: Participation of xanthophylls in oxygen transport during
photosynthesis

SOURCE: AN SSSR. Doklady*, v. 154, no. 4, 1964, 974-977

TOPIC TAGS: xanthophyll, oxygen transport, photosynthesis, labeled
oxygen green algae, chlorella species, O sup 18 determination,
lutein, carotene, chlorophyll, chromatography, F sup 18

ABSTRACT: Labeled oxygen was used in a suspension of unicellular
green algae species chlorella pyrenoidosa to study transformation
reactions of violaxanthin and lutein. In addition, other pigment
fractions were investigated under the influence of light. The
 H_2O^{18} suspension, enriched with O^{18} (68%), was exposed for 30 min-

Card 1/3

ACCESSION NR: AP4012981

utes to the light source. Chromatographic determinations of 4 pigment zones, carotene with colorless lipids, chlorophylls (masking neoxanthin), lutein and violaxanthin were made. These were then eluted and concentrated, followed by transformation of O^{18} into the radioactive isotope F^{18} , using cyclotron and 4 Mev proton irradiation of a film of each pigment fraction on a tantalum disk. The (figured) activities of the various pigments were calculated per 100 μ g of substance and a 46 microcoulomb charge carried by the protons during 4 hours following irradiation, excluding the cosmic-ray background. Standard error was at most 5%. All fractions with the exception of lutein were strongly labeled following exposure to the light, and the latter indicated the absence of O participation in the OH groups at the lutein rings. It was concluded that an exchange occurred between the epoxy oxygen of violaxanthin and the O^{18} in the water, thus confirming participation of the xanthophylls in oxygen transport during photosynthesis. O^{18} also enters the lipid fractions of carotene and the composition of the substances accompanying the chlorophylls in the chromatogram. Orig. art. has:

Card 2/3

ACCESSION NR: AP4012981

3 figures.

ASSOCIATION: Botanicheskiy institut im. V.L. Komarova Akademii
nauk SSSR (Botanical Institute, Academy of Sciences SSSR)

SUBMITTED: 28Mar63

DATE ACQ: 26Feb64

ENCL: 00

SUB CODE: CH

NO REF SOV: 013

OTHER: 003

Card 3/3

GANGRSKIY, YuSP.; ZILBERBERG, YI. KH.; MALOYAN, A.G.

Coulomb excitation of the first 2+ levels of Zr^{90} and Zr^{96} .
IAd. fiz. 1 no.6:1025-1027 1965. (MIRA 18:6)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR.

L 26683-66 EWT(m) DIAAP JD/JH

ACC NR: AF6016897

SOURCE CODE: UR/0367/65/002/005/0794/0795

AUTHOR: Gusinskiy, G.M.—Gusinski, G. M.; Yerokhina, K.I. — Erokhina, K.I.; Lemberg, I. Kh

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Lifetime of the 1.46 mev level of Ar sup 40

SOURCE: Yadernaya fizika, v. 2, no. 5, 1965, 794-795

TOPIC TAGS: argon, electron transition, Coulomb excitation, aluminum, even even nucleus

ABSTRACT: The probability of the electric quadruple transition of B(E2) from the ground state of Ar⁴⁰ to the first excited level has been determined by investigating the Coulomb excitation of this level. The 1.46 mev level was excited by bombarding aluminum with 48 mev argon ions. Measurement of B(E2) resulted in the quantity $(0.049 \pm 0.010)e^2 \cdot 10^{-48} \text{ cm}^4$. From the known relation between B(E2) and the lifetime τ of the even-even nuclei levels with the spin and parity 2^+ it is possible to calculate the value of τ . From their data, the authors obtained the value $\tau = (1.2 \pm 0.3) \cdot 10^{-12} \text{ seconds}$. Orig. art. has: 1 figure and 1 formula. [JPRS]

SUB CODE: 20 / SUBM DATE: 15May65 / ORIG REF: 002 / OTH REF: 002

Card 1/1 BLG

L 32889-65 EWT(M) DIAAP
ACCESSION NR: AP5004536

8/0048/65/029/001/0139/0143

AUTHOR: Alkhazov, D.G.; Yerokhina, K.I.; Lemberg, I.Kh.

TITLE: Level diagrams of La^{139} and Pr^{141} / Report, 14th Annual Conference on Nuclear Physics held in Tbilisi 14-22 Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29, no.1, 1965, 139-143

TOPIC TAGS: nucleus, energy level, spin, parity, coulomb field, gamma ray

ABSTRACT: The nuclear levels of La^{139} and Pr^{141} , excited by Coulomb interaction with 52 MeV quintuply ionized nitrogen ions, were investigated by γ - γ coincidence and by coincidence of γ -rays with recoil nitrogen ions. The γ -ion coincidence technique has been previously described by the present authors and others (Izv.AN SSSR, Ser.fiz.27,1285,1963). The γ - γ coincidences were observed with two $4 \times 4 \text{ cm}^2$ NaI(Tl) scintillators. The resulting level diagrams with the energies (MeV) and possible spins and parities of the levels and relative transition probabilities are shown in Figs.1 and 2 of the Enclosure. The results are compared with those of other workers. It is concluded that the level diagram for La^{139} of J.T.Wasson and C.D.Coryell (J.Inorg.and Nucl.Chem.20,1,1961) is incomplete and that of J.Jastrzeb-

Card1/3

L 32889-65

ACCESSION NR: AP5004536

ski (J.phys.et radium 21,12, 1960) is incorrect. All the levels of Pr^{141} observed in the present work were also found by B.L.Cohen and R.E.Price (Phys.Rev.123,283, 1961), but additional spin assignments and relative transition probabilities are given here. Orig.art.has: 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00/--Jan65

ENCL: 01

SUB CODE: NP

NR REF SOV: 004

OTHER: 004

Card 2/3

L 32889-65

ACCESSION NR: AP5004536

ENCLOSURE:

01

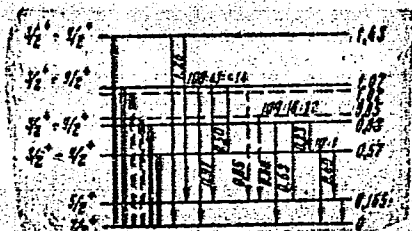


Fig. 1. Level diagram of La¹³⁹

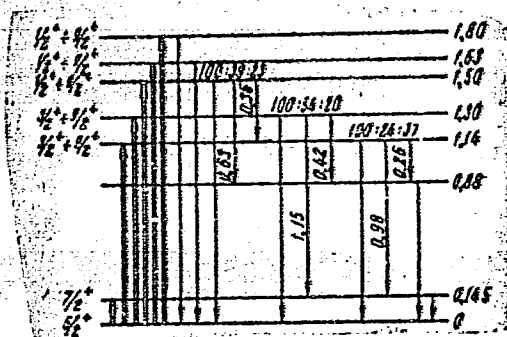


Fig. 2. Level diagram of Pr¹⁴¹

Card 3/3

ALKHAZOV, D.G.; GAL'PERIN, L.N.; GUSINSKIY, G.M.; LEMBERG, I.Kh.;
NABICHVRISHVILI, V.A.

Polarization of gamma rays emitted in the Coulomb excitation of
certain nuclei with odd A. Izv. AN SSSR. Ser. fiz. 29 no. 5: 787-
793 My '65. (MIRA 18:5)

GANGRSKIY, Yu.P.; ISAKOV, V.I.; LEMBERG, I.Kh.

Effect of interference in the Coulomb excitation of 2^+ levels in
even-even nuclei. Izv. AN SSSR.Ser.fiz. 29 no.5:853-856 My '65.
(MIRA 18:5)

1. Fiziko-tekhnicheskii institut im. A.F.Ioffe AN SSSR.

A L 11826-66 EWT(1)/EWA(h)

ACC NR: AP6001569

SOURCE CODE: UR/0120/65/000/006/0058/0064

AUTHOR: Vasil'yev, V. D.; Gal'perin, L. N.; Il'yasov, A. Z.; Lemberg, I. Kh.; Udralov, Yu. I.

ORG: Physicotechnical Institute, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Gamma spectrometer with a p-i-n semiconductor detector 25

SOURCE: Pribery i tekhnika eksperimenta, no. 6, 1965, 58-64

TOPIC TAGS: gamma spectrometer, semiconductor device, particle detector, multi-channel analyzer

ABSTRACT: The authors describe a gamma spectrometer with a p-i-n germanium detector cooled to the temperature of liquid nitrogen. The γ -spectrum is recorded by a 128-channel amplitude analyzer with an expander at the input. Line width of instrument noise is kept to 5 kev by a low-noise Chase preamplifier and carefully designed shielding. A block diagram of the unit is shown in Fig. 1. The detector is housed in the vacuum chamber of a Dewar flask and is kept at a temperature close to -190°C by good thermal contact with the bottom of a vessel filled with liquid nitrogen. The signals to be studied are fed to the preamplifier and mixed at the input with reference pulses from the amplitude-controlled oscillator. The oscillator also generates code pulses in synchronization with the reference pulses which are fed through an hf cable to the input of the amplitude analyzer.

Card 1/3

UDC: 621.382:539.16.07

L 11826-66

ACC NR: AP6001569

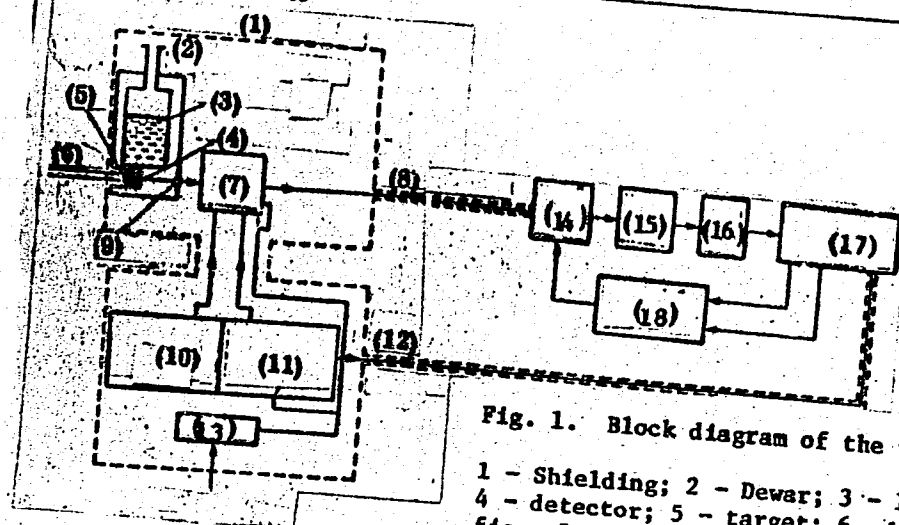


Fig. 1. Block diagram of the γ -spectrometer

1 - Shielding; 2 - Dewar; 3 - liquid nitrogen;
4 - detector; 5 - target; 6 - beam; 7 - preampli-
fier; 8 - signal; 9 - feedthrough insulator;
10, 11 - amplitude stabilized oscillator;
12 - code pulse; 13 - power supply; 14 - 6A3P control tube;
15 - UIS II amplifier; 16 - expander; 17 - 128-
channel amplitude analyzer; 18 - amplification
stabilization unit.

Card 2/3

L 11826-66

ACC NR: AP6001569

3

The code pulses separate the reference pulses from the detector signals after amplification. These same code pulses prevent registration of the reference pulses when the detector signals are being recorded. Pulses from a second amplitude-controlled oscillator may also be fed to the preamplifier input for simulating detector signals when checking the operation of the device. From the output of the preamplifier, the signals being studied and the reference pulses are fed to the third grid of a 6A3P tube, which controls amplification during stabilization. Amplification control voltage from the stabilization unit is fed to the first grid of this tube. The signals are then amplified by a UIS-II amplifier and fed through the expander to the amplitude analyzer. The various sections of the unit are described in detail, with diagrams of the cooling unit, low-noise preamplifier, expander, stabilization circuit, and output stage of the amplitude-controlled oscillator. Tests showed that continuous-duty stability of the analyzer is better than 0.15% with no apparent effects of interference from the cyclotron with which it is designed to be used. The authors thank S. M. Ryvkin, O. A. Matveyev, and N. B. Strokan for graciously supplying experimental detector models. Orig. art. has: 8 figures. [08]

SUB CODE: 20,09/SUBM DATE: 17Oct64/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS:4/7/

HW
Card 3/3

YEROKHINA, K.I.; LEMBERG, I.Kh.; NABIRHVISHVILI, V.A.

Coulomb excitation of the levels Gd^{155} , Dy^{161} , and Yb^{171} . Izv. AN
SSSR. Ser. fiz. 29 no.7:1103-1106 J1 '65. (MIRA 18:7)

L 23015-66 EWT(m)/EPF(n)-2/T/EWP(t)/EWA(h) JD/WJ/JG

ACC NR: AP6014826

SOURCE CODE: UR/0367/65/001/006/1025/1027

AUTHOR: Gangrskiy, Yu. P.--Gangrsky, Yu. P.; Lemberg, I. Kh.

ORG: Physicotechnical Institute im. A. F. Ioffe AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Coulomb excitation of the first levels of 2 sup + Zr sup 90 and Zr sup 96

SOURCE: Yadernaya fizika, v. 1, no. 6, 1965, 1025-1027

TOPIC TAGS: nucleon, zirconium, inelastic scattering, nucleon interaction, Coulomb excitation

ABSTRACT: The Coulomb excitation of the first levels of Zr^{90} and Zr^{96} was investigated using the coincidences between the inelastic scattering of ions and γ -quanta emitted in the degeneration of excited states. N^{14} ions with an energy of 44 MEV were used as bombarding particles. The measured transition probabilities for the first levels in Zr^{90} and Zr^{96} are equal respectively to $(0.042 \pm 0.015) e^2 \cdot 10^{-48} \text{ cm}^4$ (3.5 times as high as the single-particle evaluation) and $(0.055 \pm 0.022) e^2 \cdot 10^{-48} \text{ cm}^4$ (4.5 times as high as the single-particle evaluation). The previously unknown value for the energy of the first level in Zr^{96} was found to be $1.75 \pm 0.05 \text{ MEV}$. The experimental level energies and transition probabilities are compared with calculations based on a simple quantitative model, taking into account pairing and

Card 1/2

L 23015-66

ACC NR: AP6014826

quadrupole-quadrupole interactions between outer nucleons. When the spectrum of the one-particle neutron state, taken from the (d, p) reactions on zirconium isotopes, is used in the calculations, the agreement with experimental data is better than when the Nilsson scheme is used (Kgl. Danske Vidensk. Selsk. Mat. Fys. Medd., 29, No. 16, 1955). The authors thank A. I. Veselov and K. I. Yerokhin for assistance with the calculations. Orig. art. has: 4 figures and 1 table. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 28Dec64 / ORIG REF: 002 / OTH REF: 002

Card 2/2 *sla*

L 25742-66 EWT(m) DLAP JD/JG

ACC NR: AP6016391

SOURCE CODE: UR/0048/65/029/007/1103/1106

AUTHOR: Yerokhina, K. I.; Lemberg, I. Kh.; Nabichvrishvili, V. A. 34
B

ORG: none

TITLE: Coulomb excitation of the levels of ²⁷Gd sup 155, Dy sup 161, and Yb sup 171

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 7, 1965, 1103-1106

TOPIC TAGS: ytterbium, dysprosium, gadolinium, coincidence counting, inelastic scattering, Coulomb excitation

ABSTRACT: This article is a further analysis of results from an experiment in which the coincidences of γ -quanta with inelastically scattered nitrogen ions were measured for the purpose of studying the Coulomb excitation of the levels of ¹⁵⁵Gd, ¹⁶¹Dy, and ¹⁷¹Yb. The method used in taking the measurements and processing the results has been described in earlier works. In this article the discussion is directed toward the higher collective levels of those nuclei which do not belong to the basic rotational band. Data is presented for these levels and comparisons made with different levels using the Berson calculated results. It is concluded that more detailed and accurate processing of the experimental data does not change the conclusion about the collective nature of the investigated levels of Gd, Dy, and Yb. Orig. art. has: 3 figures and 1 table. [JPRS]

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 005
Card 1/1

L 26655-66 EWT(m) DIAAP JD

ACC NR: AP6017118

SOURCE CODE: UR/0048/65/029/012/2231/2234

AUTHOR: Andreyev, D. S.; Gangurskiy, Yu. P.; Lemberg, I. Kh.; Nabichvrishvili, V. A.

ORG: none

TITLE: Coulomb excitations of lower levels in the isotopes Pb sup 204, sup 206, sup 207 and Bi sup 209 /This paper was presented at the 15th Annual Conference on Nuclear Spectroscopy and the Structure of the Atomic Nucleus, held in Minsk from 25 January to 2 February 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 12, 1965, 2231-2234

TOPIC TAGS: Coulomb excitation, lead, bismuth, nucleon, nitrogen cyclotron, magnetic field, gamma quantum, even nucleus, neutron proton

ABSTRACT: In order to determine the effective nucleon charge it is especially important to know transition probabilities for nuclei having one nucleon (or one hole) above the filled shell. Accurate data on this problem are lacking because the Coulomb output of the excited levels of such nuclei are very small even when bombardment particle energies are very high.

Nitrogen ions ($N^{14.5+}$) were accelerated in the FII cyclotron up to 66.5 Mev by enhancing the magnetic field. Gamma quanta ejected forward from a Bi-enriched lead target were recorded. Nitrogen ions of 66.5 Mev energy were used to study the Coulomb excitation of Pb^{207} and Bi; and 63 Mev ions, for Pb^{204} and Pb^{206} .

Spectra of γ N-coincidence are shown in figures and the results of

Card 1/2

L 26655-66

ACC NR: AP6017118

2

Coulomb excitation are tabulated. These results are compared with those of other authors. The values of $B(E2)$ are adversely affected by inadequate correction for angular correlation, and though the error is not more than 25% for the 0.57 Mev level of Pb^{207} , it reaches 35 to 40% for the 0.89 Mev level of Pb^{207} and the 0.91 Mev level of Bi^{209} . The effective neutron charge is found to be close to unity, whereas that for the proton is unexpectedly large: 2.6 to 3.0. Speculations are advanced briefly on the effect of level excitation by giant resonance and effects of possible secondary processes. The general rule is drawn: for spherical even-even nuclei the farther the closed shell is from the nucleus, the lower is the energy of the first $2+$ level and the greater is the value of $B(E2)$ for the transition to this level; but this rule does not hold completely for even isotopes of lead. Orig. art. has: 4 figures, 1 formula, and 1 table. [JPRS]

SUB CODE: 20 / SUEN DATE: none / ORIG REF: 002 / OTH REF: 006

Card 2/2 *h*

L 29282-66 ENT(m)

ACC NR: AF6019333

SOURCE CODE: UR/0367/66/003/003/0461/0464

AUTHOR: Gangrskiy, Yu. P.; Lemberg, I. Kh.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR (Fiziko-tehnicheskii institut AN SSSR)

TITLE: Coulomb excitation of electric octupole transitions in In sup 115 nuclei

SOURCE: Yadernaya fizika, v. 3, no. 3, 1966, 461-464

TOPIC TAGS: Coulomb excitation, indium, gamma quantum, alpha particle, isotope

ABSTRACT: The Coulomb excitation of levels in In^{115} , which are de-excited to the ground state through cascades involving the isomeric 335 keV level of In^{115} ($T_{1/2} = 4.5$ hours), was investigated. The excitation of the levels was measured according to the yield of 335 keV γ -quanta. The observed dependence of the yield on the α -particle energies can be explained by the electric octupole excitation of two groups of levels, the energies of which are known from other spectrometric experiments. The 0.595 and 0.825 MeV levels belong to the first group; those with the energies 2.06, 2.17, and 2.49 MeV, to the second one. It seems that the levels in the second group are similar to the 3- excited states in the neighboring even isotopes of Cd and Sn. Orig. art. has: 3 figures and 1 table. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20, 18 / SUBM DATE: 06Jul65 / ORIG REF: 002 / OTH REF: 005

Card 1/1

L 31406-66 EWT(m)

ACC NR: AP6022574

SOURCE CODE: UR/0048/66/030/003/0449/0454

AUTHOR: Gusinskiy, G. M.; Lemberg, I. Kh.

ORIG: none

TITLE: Angular distribution of nuclear gamma radiation emitted as a result of coulomb excitation of Cu sup 65, Nb sup 93, Pd sup 105, and Sn sup 117

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 3, 1966, 449-454

TOPIC TAGS: angular distribution, gamma radiation, gamma quantum, coulomb excitation, excited nucleus, nuclear spin, gamma transition, alpha bombardment, cyclotron, MEV, accelerator, scintillation counter, pulse analyzer

ABSTRACT: The angular distribution of gamma quanta emitted from Coulomb excited nuclei was studied to determine the excited spin levels and relative intensities of the E2 and M1 transitions. Bombardment was accomplished with alpha-particle having energies of 7.24, 7.85, and 9.6 mev, and 48.3 mev nitrogen ions accelerated in the Physical Technical Institute cyclotron. Measurements were made at backscatter angles of 0 to 90 deg with two NaI(Tl) scintillation crystals 7 cm from the target. A 128-channel pulse amplitude analyzer was used to record the scintillator outputs. Results of angular measurements, given in a table, indicate the characteristics of the levels and transitions. Specific experiments performed on each of the nuclei are detailed, and the reduced transition probabilities and partial lifetimes of the levels are tabulated

Orig. art. has: 2 formulas and 2 tables. [JPRS]

Cord 1/1 SUB CODE: 20, 18/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 012

L 44038-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG
ACC NR: AP6032230 SOURCE CODE: UR/0367/66/003/005/0794/0797

AUTHOR: Gangrskiy, Yu. P.; Lemberg, I. Kh.; Nabichvrishvili, V. A. 29
B

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Coulomb excitation of levels in the beta- and gamma-vibrational bands of the Sm sup 152 and W sup 186 nuclei 19

SOURCE: Yadernaya fizika, v. 3, no. 5, 1966, 794-797

TOPIC TAGS: Coulomb excitation, gamma quantum 21 21

ABSTRACT: The Coulomb excitation of nuclear levels in Sm¹⁵² and W¹⁸⁶ was investigated using the method of coincidences between γ -quanta and inelastically scattered N^{14} ions. The 0+, 2+, and 4+ levels in the β -vibrational band and 2+ level in the γ -vibrational band of Sm¹⁵² and also the 2+ and 4+ levels in the W¹⁸⁶ γ -vibrational band were excited. The values of the probability of the electric quadrupole transition from the ground state to the 2+ levels of the β - and γ -vibrational bands in Sm¹⁵² and W¹⁸⁶ were determined. Orig. art. has: 4 figures, 1 formula and 3 tables. [Based on authors' Eng. abst.] [JPRS: 38,712]

SUB CODE: 20 / SUBM DATE: 06Jul65 / ORIG REF: 003 / OTH REF: 004

Card 1/1 blg

0919 1255

L 27235-66 EWI(d)/EWI(m)/ETC(m)-6/T-2/EWP(f) WW

ACC NR: AP6009919

(A)

SOURCE CODE: UR/0413/66/000/004/0116/0116

39
8

AUTHORS: Pokrovskiy, G. P.; Lenin, I. M.; Panfilov, V. T.; Fedorov, P. V.

ORG: none

TITLE: Carburetor for internal combustion engines. Class 46, No. 179121

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 116

TOPIC TAGS: fuel carburetor, internal combustion engine, transducer

ABSTRACT: This Author Certificate presents a carburetor for internal combustion engines. The carburetor contains a diffuser with atomizer which supplies fuel from a hermetically sealed float chamber at a rate dependent on the pressure difference between the chamber and the diffuser (which are connected by a variable resistance channel (see Fig. 1). To increase economy, the channel is equipped with a fast-

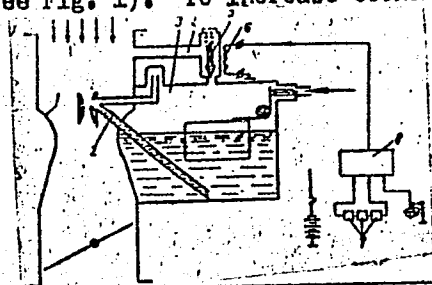


Fig. 1. 1 - diffuser; 2 - atomizer;
3 - float chamber; 4 - channel;
5 - valve; 6 - electromagnet;
7 - sensor; 8 - transducer.

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UDC: 621.43.033.9

2

L 27235-66

ACC NR: AP6009919

0

· acting valve actuated by an electromagnet in response to an electric signal from a transducer which senses the engine operating regime and the environmental conditions. Orig. art. has: 1 figure.

SUB CODE: 21, 13/ SUBM DATE: 22Feb64

Card 2/2 CC

LEMBERG, Mikhail Dmitriyevich; ~~EYGENBROT~~, V.M., retsenzent; PLEVAKO,
H.A., red.; BORUNOV, N.I., tekhn. red.

[Pneumatic control] Pnevmoavtomatika. Moskva, Gos. energ.
izd-vo, 1961. 110 p. (Biblioteka po avtomatike no.46).
(MIRA 15:3)

(Pneumatic control)

LEMBERG, Mikhail Dmitriyevich; PLEVAKO, N.A., red.; BUL'DYAYEV, N.A.,
tekhn. red.

[Fundamentals of hydraulic control]Elementy gidravtomatiki.
Moskva, Gosenergoizdat, 1962. 126 p. (Biblioteka po avtomatike,
no.70) (MIRA 16:2)

(Hydraulic control)

✓
S/118/62/000/002/004/005
D221/D301

AUTHORS: Lemberg, M.D., Luk'yanov, N.G., Mayzel', L.M., and
Eygenbrot, V.M., Engineers

TITLE: New circuits and means of pneumatic control

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 2,
1962, 31 - 34

TEXT: The authors describe the results obtained at the Institut avtomatiki i telemekhaniki (Institute of Automation and Telemechanics), Proyektno-konstruktorskoye byuro Ministerstva stroitel'stva RSFSR (Project and Design Office of Ministry of Construction RSFSR) the factory 'Tizpribor' and other organizations. The above permit also the realization of pneumatic control for positioning from a central control point. Qualitative efficiency of pneumatic circuits depends on correctly assessing the properties of air channels, which predetermine the quickness of response of the system. The results of experimental determination of the time characteristics of different length pneumatic pipes (made of copper) are described.

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New circuits and means of pneumatic ... S/118/62/000/002/004/005
D221/D301

The analysis indicates that the quickness of response may be improved by reducing the pressure of actuation and keeping constant the excitation pressure at the pipe inlet. The evaluation of control signals with various parameters from the point of view of freedom from interference demonstrates the expediency of pressure signals with pulse characteristics: $P = 0$ and $P > C$, where C is a certain pressure when the pneumatic element is operating. By the assumption $C \sim 0.2$ to 0.3 kg/cm², the response time of pneumatic elements at a distance of up to 300 m is 6 - 8 sec. The use of these two pulse marks permits coding of control signals. This demonstrates the advantage of parallel feed of signals which reduces the transmission time and exhibits a high immunity from interference. Its operational principle is based on a two-step selection of objects by a decade system. The control object is chosen by manual control valves which are joined into a set of tens and units. The consecutive operations are illustrated by an example of a piston actuator. The arrangement includes a block of indicators forming a panel. The manometers are designed for visual observation of control operation and the position of the actuator. In the case of fire and safety

Card 2/3

New circuits and means of pneumatic ... S/118/62/000/002/004/005
D221/D301

requirements it is possible to apply combined pneumatic and electric circuits of signalization. For this purpose the relays of pressure convert the pneumatic control signals into electrical pulses, and use diaphragm relays. Limit switches may also be used as keys for selecting the units and decades. A further improvement is attained by applying a 100 actuator system. The shorter response time is achieved by air feed from the main supply near the selector bloc and with the incorporation of booster relays for the opening, closing and position control of the actuator. The circuit was tested and the results are indicated in a table. The above confirmed the correspondence of the circuit characteristics which are stipulated for high speed operation. The advantages of the considered arrangement is the reduction of panel sizes by using general control members. The number of connections is down from 200 to 25. There are 5 figures and 1 table.

Card 3/3

BAKSHT, Rafail Isayevich; LEMBERG, Mikhail Dimitriyevich; BOLOTIN,
Kh.L., kand. tekhn.nauk, dots., retsenzent; BURTSEV, K.V.,
inzh., red.; LESHCHENKO, I.I., red. izd-va; UVAROVA, A.F.,
tekhn. red.

[Clamping devices of lathes] Zazhimnye ustroistva tokarnykh
stankov. Moskva, Mashgiz, 1962. 150 p. (MIRA 15:10)
(Lathes)

LEMBERG, M.D., inzh.; LUK'YANOV, N.G., inzh.; MAYZEL', L.M., inzh.; EYGENBRDT,
V.M. inzh.

New systems and means of pneumatic control. Mekh.i avtom.proizv.
16 no.2:31-34 F '62. (MIRA 17:3)

L 3510-66 EWT(d)/EWT(m)/EPF(c)/ENP(c)/ENP(v)/ENP(h)/T/ENP(v)/ENP(h)
AM5018515 IJP(c) DJ/BC BOOK EXPLOITATION

UR/
62-522

Lemberg, Mikhail Dmitriyevich

Hydraulic systems of automation (Sistemy gidroavtomatiki) Moscow, Izd-vo "Energiya," 1965. 118 p. illus., biblio. Errata slip inserted. 12,500 copies printed. Series note: Biblioteka po avtomatike, vyp. 131

TOPIC TAGS: industrial automation, automatic control system, hydraulic logic device, automatic control design, hydraulic equipment, servosystem

PURPOSE AND COVERAGE: This book is intended for engineering and technical personnel dealing with automation problems in production processes. It provides information on classification, operational principles, and fields of use of automatic hydraulic systems. Basic flow diagrams of hydraulic, automatic control and regulation systems are presented. No personalities are mentioned.

TABLE OF CONTENTS:

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- Ch. I. General information on hydraulic systems -- 3
- Ch. II. Automatic hydraulic sequence-time control systems -- 8
- Ch. III. Hydraulic servosystems -- 35
- Ch. VI. Hydraulic regulating systems -- 74
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SUB CODE: IE

SUBMITTED: 25Feb65

NO REF SOV: 024

OTHER: 001

Card

2/2 RP

ACC NR: AT6021740

SOURCE CODE: UR/0000/66/000/000/0165/0171

AUTHOR: Baksht, R. I.; Lemberg, M. D.; Marzel', L. M.

ORG: none

TITLE: Pneumatic automation equipment for controlling plants in the gas industry

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Pnevmoavtomatika (Pneumatic automation). Moscow, Izd-vo Nauka, 1966, 165-171

TOPIC TAGS: pneumatic control, gas industry, industrial automation, pneumatic device

ABSTRACT: This article reports on work conducted and equipment developed by the SKB for Automating Gas Instruments of the State Production Committee of the Gas Industry (SKB "Gazpriboravtomatika" Gosudarstvennogo proizvodstvennogo komiteta gazovoy promyshlennosti) to automate gas engine compressors (GEC) and gas distributing stations (GDS) by pneumatic automation means. The GEC consists of a gas engine and piston compressor with a common crankshaft. The systems developed and manufactured to automate the GEC are the 1000-hp 10GC and the 1500-hp 10GKN. The GDS systems reduce pressure from 30—55 to 3—6 kg/cm². They differ from each other in their engineering drawings (depending on the equipment used and the number of users) and in their flow-rate characteristics (from several hundred to several hundred thousand cubic meters per hour). The GDS automation system must maintain pressure within certain limits at the output, remove faulty equipment from the operation (cutting in reserve equipment).

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ACC NR: AT6021740

and make remote control of all executory mechanisms possible. The devices used in these systems may all be functionally divided as follows: (1) sources of information on the course of the engineering process (sensors with proportional and discrete output); (2) elements for transmitting, distributing, and performing logic operations; for converting one sort of energy into another; and for amplification (relays, reverse and reversible valves, converters and amplifiers); (3) control elements (final cut-outs, buttons, tumblers, and switches); (4) signal (indicator) devices. Domestic Soviet industry does not produce the greater part of the listed equipment; therefore the SKB developed new units (with diaphragms, unactuated by throttle or flow rate) which require no special treatment of air or gas and are operable from -40 to +50 C. Eleven devices are illustrated and described. Orig. art. has: 10 figures.

SUB CODE: 13, 05 SUBM DATE: 03Feb66

2/2

BUKHTOYAROVA, Z.M.; LEMBERG, V.K.

Tumors developing in rats after the intraperitoneal administration
of plutonium nitrate (Pu^{239}). Vop.onk. 5 no.8:140-148 '59. (MIRA 12:12)

1. AMN SSSR.
(NEOPLASMS exper.)
(PLUTONIUM)

28214

S/581/61/000/000/015/020
D299/D304

27-1220

AUTHORS: Lemberg, V.K., Bukhtoyarova, Z.M. and Nifatov, A.P.

TITLE: The distribution of plutonium in the liver according to the results of histoautoradiography

SOURCE: Lebedinskiy, A.V. and Moskalev, Yu.I., eds. Biologicheskoye deystviye radiatsii i voprosy raspredeleniya radioaktivnykh izotopov; sbornik rabot. Moscow, Gosatomizdat, 1961, 136-144

TEXT: Due to the absence of suitable published data on the subject, the authors set out to study the course of the micro-distribution of plutonium-239 in the liver and bones by the histoautoradiographic method, i.e., by studying histological slides fixed on a photographic emulsion. The tests were run on white rats, plutonium-239 being introduced intraabdominally as $\text{Pu}(\text{NO}_3)_4$ in a single dose of $7 \mu\text{c/kg}$ at $\text{pH} = 2$. After 6 and 12 hours, and 1, 3, 7, 14, 28, 41, 56, 88 and 225 days the rats were decapitated and slides of the

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28244

S/581/61/000/000/015/020
D299/D304

The distribution of plutonium...

bone and liver tissues prepared. A detailed analysis of the photos showing the tracks of plutonium alpha-particles at various stages after the introduction of plutonium-239 is given and the results of the experiments are compared with various findings in the specialized literature on this subject. The histoautocardiograms showed a definite redistribution of plutonium in the structural elements of the bones and liver. Within 6-12 hours after its introduction diffuse distribution of plutonium in all structural parts of the liver is noted. Subsequently, from 1-225 days, the plutonium content in the hepatic cells decreases and begins to accumulate in the Kupffer's cells and the macrophages of the perivascular connective tissue. Six to 12 hours after its introduction the bones contain only a small amount of diffusely distributed plutonium (bone marrow, compact substance and diploë). By the end of the 3rd day a marked increase was noted in the plutonium content of the bone marrow. At subsequent stages the plutonium content in the bone marrow gradually diminished, but increased in the endosteum and periosteum. Some plutonium, however, was retained in the compact bone throughout the

Card 2/3

The distribution of plutonium...

²⁸²⁴⁴
S/581/61/000/000/015/020
D299/D304

whole period of the investigation. There are 6 figures and 17 references: 6 Soviet-bloc and 11 non-Soviet-bloc. The 4 most recent references to English-language publications read as follows: J.S. Arnold cited by L.F. Lamerton "Proceedings of the Second United Nations International Conference of the Peaceful Uses of Atomic Energy", vol. 22, p. 119. Geneva, 1958; M.P. Finkel, Proceedings of the Society for Experimental Biology and Medicine, 83, 3, 494 (1953); M. Heller, Ch. 5 - "Bones" in the book by W. Bloom. Histopathology of Irradiation from External and Internal Sources, 70-161. N.Y. - Tor. - Lnd., 1948; R.J. Schubert, M. Finkel, M. White a. G. Hirsch, J. Biolog. Chem., 182, 2, 635 (1950).

X

Card 3/3

44062

S/742/62/000/000/004/021
I015/I215

27.12.20

AUTHORS: Lemberg, V.K., Nifatov, A.P.

TITLE: The microdistribution of plutonium in the liver of rabbits and rats

SOURCE: Plutoni-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskaev. Moscow, Medgiz, 1962, 23-31

TEXT: The detailed microdistribution of this element in the liver has not yet been clarified. Experiments were carried out on 48 rabbits and 44 albino rats. The former received a single dose of 7 μ Ci/kg b.w. of plutonium nitrate (pH = 2.0) intravenously and the latter were given the same dose i.p. In addition, a single dose of

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S/742/62/000/000/004/021
I015/I215

The microdistribution of plutonium...

3 μ Cu/kg b.w. of sodium plutonyl-triacetate (pH = 6.5) was injected i.p. to 12 albino rats. The rabbits were sacrificed by air embolism 1,3,7,14,30,90,135 and 180 days after the injection. Nine rabbits died during that period of time. The rats were decapitated 6 and 12 hours, and 1,3,7,14,30,45,60,90 and 210 days after the injection. The rats which received the complex salt of plutonium were sacrificed 14, 30, 90 and 365 days after the injection. The liver was fixed in 10% formalin solution, embedded in celloidin-paraffin and cut into sections 5 μ thick. Autoradiographs were prepared according to the method of Ye.V. Erleksova and Evans. Exposure time: 4-8 weeks in a refrigerator. Staining with Weigert's hematoxylin. It was found that Pu was accumulated mainly in the reticulo-endothelial system elements of the liver. The complex salt of plutonium was distributed relatively evenly in all the liver tissue elements and was present in lesser

Card 2/3

S/742/62/000/000/004/021
I015/I215

The microdistribution of plutonium...

amounts than the other plutonium compounds. There was a difference in the dynamics of the microdistribution of plutonium nitrate between the rats and the rabbits: it was diffusely distributed during 6-12 hours after the injection in the rats and subsequently accumulated in Kupfer cells and macrophages (1-210 days), whereas in the rabbits it appeared in high concentration in the RES elements of the liver already 1 day after the injection. There are 9 figures.

X

Card 3/3

44063

S/742/62/000/000/005/021
I015/I215

27.1220

AUTHORS: Lemberg, V.K., Bukhtoyarova, Z.M.

TITLE: Histoautoradiographic data on the distribution of plutonium in the bones of rats and rabbits

SOURCE: Plutoni-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz, 1962, 32-40

TEXT: The microlocalization of Pu²³⁹ in the bones has been insufficiently studied. Experiments were carried out on 44 albino rats weighing 160-200 g and 35 rabbits weighing 2.5-3.5 kg. A single dose of plutonium-239 nitrate (7 μ Cu/kg of the radioisotope) was administered i.p. to the rats and i.v. to the rabbits. The rats were

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S/742/62/000/000/005/021
I015/I215

Histoautoradiographic data...

decapitated 6 and 12 hours, 1,3,7,14 days and 1,1½,2,3, and 7½ months after the injection; the rabbits were sacrificed by air embolism 1, 3,7,14 days and 1,3,4,5 and 6 months after the injection. The bones were decalcified and sectioned for hisloradiorutographs. The decalcification was carried out with Ebner's fluid, which causes only a minimal loss of Pu. Histoautoradiography was performed according to Evans and Ye.V. Erleksova. The exposure time was 4 and 8 weeks. The sections were stained with Weigert's hematoxylin. It was found that plutonium nitrate was retained in the bones mainly in the endosteum, periosteum and bone marrow and to a lesser extent in other bone trabecules. The distribution of plutonium in bone tissue differed according to the animals species: the maximal Pu content in the bone marrow of rabbits was noticed 7 days - 4½ months after injection; in rats

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I015/I215

Histoautoradiographic data...

the maximum was reached on the 3rd day, after which a gradual decrease was observed. In the rabbits, unlike the rats, a marked concentration of Pu in the RES cells of the bone marrow was observed. The affinity of Pu to the endosteum and periosteum, however, was equally marked in both the rats and rabbits, but it reached a constant level on the 3rd-7th day in the rats, whereas its concentration increased steadily till the 6th month in the rabbits. There are 7 figures.

X

Card 3/3

27.12.20

44073

S/742/62/000/000/015/021
I015/I215

AUTHORS: Lemberg, V.K., Koshurnikova, N.A., Klyzhuk, K.N.

TITLE: The effect of incorporated plutonium-239 on the blood in rabbits

SOURCE: Plutoni-239; raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya. Ed. by A.V. Lebedinskiy and Yu.I. Moskalev. Moscow, Medgiz, 1962, 92-102

TEXT: The effect of incorporated Pu on the blood has been insufficiently studied and the data present in the medical literature is a matter of controversy. Experiments were carried out on 119 rabbits (Shinshil strain) weighing 2500-3000 g. They were administered i.v. 7 and 2 μ Cu/kg b.w. of plutonium nitrate (pH = 2). The

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8/742/62/000/000/015/021
I015/I215

The effect of incorporated plutonium-239...

peripheral blood and the bone marrow were examined during life and after killing of the animals as well. The investigation lasted for 15 months. The distribution of Pu in the hemopoietic organs was studied histoautoradiographically. A part of the radioisotope was retained in the reticulo-endothelial system. The bone marrow was affected focally due to the distribution characteristics of Pu in RES-cells. The lymphatics were relatively well preserved due to poor distribution of Pu in the lymphopoietic organs -(the white pulp of the spleen and the germinative centers of the follicles in lymph nodes). The peripheral blood showed only very slight changes. This was considered as a result of increased hemopoiesis. There are 7 figures and 1 table.

Card 2/2

L 34122-65 ENG(j)/EWT(m) GS

ACCESSION NR: AT5006130

S/0000/64/000/000/0237/0242

AUTHOR: Koshurnikova, N. A.; Lemberg, V. K.

TITLE: Long-term effects of aseptic inflammation in rats exposed to plutonium-239 ¹³_{B+1} 19

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 237-242

TOPIC TAGS: plutonium-239, radioisotope, radioactivity, tumor, bone, hemopoiesis

ABSTRACT: Aseptic inflammation was induced in the animals by subcutaneous administration of 0.1 ml of turpentine once every 2 weeks for 3 months. Turpentine is not a carcinogen; it results in inflammation with an acute leukocyte reaction. The turpentine combined with low doses of Pu²³⁹ (0.63 µc/kg) shortened the survival time of the experimental female rats. Aseptic inflammation reduced the number of bone and blood tumors in the animals of both sexes. However, repeated injections of turpentine, the administration of small amounts of Pu²³⁹, and a combination of the two factors caused some increase in the number of glandular tumors in the experimental rats. The tumors were often multiple, e.g., in the females, tumors of the hypophysis were often combined with mammary and ovarian tumors. The authors

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L 34122-65

ACCESSION NR: AT5006130

ascribe the lack of osteosarcomas to the inhibitory effect of turpentine on the development of neoplasms in bony tissue. Orig. art. has 3 tables.

ASSOCIATION: none

SUBMITTED: 10Apr64

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 000

Card 2/2

L 34118-65 EWG(j)/EWI(m) GS

ACCESSION NR: AT5006131

S/0000/64/000/000/0243/0250

AUTHOR: Lemberg, V. K.

TITLE: Bone tumors in dogs exposed to plutonium-239 ¹²_{B+1}

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 243-250

TOPIC TAGS: plutonium-239, radioisotope, radioactivity, tumor, bone

ABSTRACT: Pathologiccoanatomical investigation of the skeleton of 10 dogs that died or were sacrificed at various times after receiving four intravenous injections of plutonium nitrate in a total dose of 0.2 μ c/kg. Six of the eight animals that survived more than 2 years were found to have malignant bone tumors. The latent period of the osteosarcomas averaged 1421 days, or 32.5% of the mean life expectancy. Of the seven osteosarcomas described in the article, four arose in the epiphyseal-metaphyseal regions of the long bones (femur, humerus, and tibia), two in the vertebrae, and one in the scapula. In histological structure, six of the osteosarcomas were of the osteoplastic type, and one, of the osteolytic type. Tumor-free portions of the skeleton showed signs of impairment of normal reconstruction of bony tissue

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L 34118-65

ACCESSION NR: AT5006131

and a slight increase in the number of obliterated Haversian canals. The author stresses, however, that obliteration of Haversian canals and degenerative changes in cartilage are also signs of normal age-related changes. Thus, the intensification of such changes in chronic plutonium-induced injury may also be regarded as an indication of premature aging. Orig. art. has: 6 figures, 1 table.

ASSOCIATION: none

SUBMITTED: 10Apr64

ENCL: 00

SUB CODE LS

NO REF SOV: 000

OTHER: 000

Card 2/2

L-34134-65

ACCESSION NR: AT5006141

S/0000/64/000/000/0343/0347

AUTHOR: Belyayev, Yu. A.; Lemberg, V. K.

TITLE: Effectiveness of diethylenetriaminepenta-acetic acid (DTPA) after intratracheal administration of plutonium to rats

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 343-347

TOPIC TAGS: plutonium-239, radioisotope, radioactivity, liver, lung, complexing agent, therapy

ABSTRACT: Following the intratracheal administration of Pu^{239} in the nitrate form or carbonate complex, DTPA proved to be effective in removing the isotope from the lungs even when applied soon afterward. Intraperitoneal injection of DTPA was somewhat more effective than intratracheal. Eighty per cent of the ammonium plutonium pentacarbonate injected intravenously was retained in the liver. The average amount of Pu^{239} excreted with urine was 0.1%; with feces, 12% (from the 1st to 7th days). A single intraperitoneal injection of DTPA (24 hours after intravenous injection of the carbonate complex of plutonium) reduced the amount of Pu^{239} in the

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ACCESSION NR: AT5006141

liver by 23% of that in the control. The author concludes that it is much more difficult at present to remove plutonium from the lungs than from the skeleton. Orig. art. has 4 tables.

ASSOCIATION: none

SUBMITTED: 10Apr64

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 000

Card 2/2

LEMBERG, V.T.; NEVRYUZIN, M.A.

Testing the Du-500 slide valves. Vest. mash. 38 no.3:31-32 Mr '58.
(Valves) (MIRA 11:2)

INBERG, Ya. A.

22010 INBERG, Ya. A. Machinnye konfrentsiya po problemam poslova i razgovoreshchego
izmeneniya. (Kiy-v' - 11 Apr. 1949) - 7 ed.: N. V. Ilyin. Izd. 2-ye, 1949,
No 7, str. 69-82

SC: Ictopis' Zhurnal'nykh Statei, No. 16, Moskva, 1949.

LEMBERG Ya. M.

6455. Lemberg Ya. M. Rate of action of drugs introduced into the bone-marrow Soviet Medicine 1949, 6 (21-22) Tables 1

Comparison of intravenous and intraosseous injections of cytisine in 17 cases showed no difference (average time 10.9 sec. for the intravenous and 11 sec. for the intra-osseous route) in the times required for the effect to be perceptible.

Van der Molen - Terwolde

SO: Excerpta Medica - Section II Vol. III No. 11

LEMBERG, Ya.M., kandidat meditsinskikh nauk

Intrasternal blood transfusion and administration of fluids.
Khirurgiia no.8:68 Ag '54. (MLRA 7:11)

1. Iz khirurgicheskoy propedevticheskoy kliniki Stalinskogo
meditsinskogo instituta.

(BLOOD TRANSFUSION,

intrasternal)

(INFUSIONS, PARENTERAL,

intrasternal)

(STERNUM,

intrasternal blood transfusion & infusion of fluids)

LEMBERG, Ya.M., kandidat meditsinskikh nauk; RIVZINA, V.A.

Injuries of the hand and fingers in workers of the coal industry.
Ortop.travm. i protez. 17 no.6:129 N-D '56. (MLRA 10:2)

1. Iz khirurgicheskoy propedevticheskoy kliniki Stalinskogo meditsin-
skogo instituta.

(COAL MINES AND MINING--ACCIDENTS)

(HAND--WOUNDS AND INJURIES)

PUKA, Taras Fridrikhovich; BAZHANOVA, S., red.; LEMBERGA, A.,
tekhn. red.

[Decorative forms of woody plants for landscape garden-
ing] Drevesnye dekorativnye formy dlia zelerykh nasazh-
denii. Riga, Izd-vo AN Latviiskoi SSR, 1963. 93 p.
(MIRA 17:2)

1. LEMBERGER, A.
2. USSR (600)
4. Construction Industry
7. Technical builders' conference, Biul. stroi. tekhn., 9, No. 22, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

1. LEMBERGER, A.
2. USSR (600)
4. Concrete
7. Efficient method of preparing concrete, *Biul. stroi. tekhn.* 10 no. 5, 1953 .

9. Monthly List of Russian Accessions, Library of Congress, _____ 1953. Unclassified.

LEMBERGER, A.

The schoolhouse has been erected in 90 days. Stroitel' no.5:5-6
My '58. (MIRA 11:6)

1.Zamestitel' nachal'nika proizvodstvennogo otdela tresta
Donmashstroya, Kramatorsk.
(Kramatorsk--Schoolhouses)

MONASTYRSKIY, M.; LEMBERGER, A.; YEFIMOV, N., inzh.; GRISHIN, K., tekhnik;
YEVORENKO, G., inzh.

Making large blocks in construction yards in Krasnoturinsk,
Kramatorsk, Zhukovskiy, and Chita. Stroitel' no.7:5-7, 10.
J1 '59. (MIRA 12:10)

1. Upravlyayushchiy trestom Bazstroy (for Monastyrskiy). 2. Zame-
stitel'nachal'nika proizvodstvennogo otdela tresta Donmashstroy
(for Lemberger). (Concrete blocks)